Amendment to the Claims

Claim 1 (Currently Amended): A fault tolerant liquid crystal display comprising:

a polarizer for coupling to a beam of incident light to polarize the beam of light with respect to a polarization angle;

a plurality of liquid crystal display regions operably coupled to the polarizer, wherein a plurality of pixels are arrayed on each of the display regions and the display regions are superimposed upon each other to create a one-to-one correspondence between pixels on the superimposed display regions;

~~a plurality of pixels arrayed on each of the liquid crystal display regions, each pixel having a collinear one-to-one correspondence with a pixel on an adjacent liquid crystal display region;~~

an analyzer coupled to the plurality of liquid crystal display regions and the polarizer to pass a gray-scale portion of the beam of polarized light transmitted as a function of the polarization angle; and

a means to control gray-scale on ~~at least one of the pixels on at least one~~ the plurality of ~~the~~ liquid crystal display regions.

Claim 4 (Previously amended): The liquid crystal display of claim 1 wherein the gray-scale control means includes an electronically programmable driver and interface circuitry formed on at least one of the liquid crystal display regions.

Claim 12 (Currently amended): The liquid crystal display of claim 1 wherein the means to control gray-scale controls the intensity of the transmitted light through at least two collinear pixels on at least two liquid crystal display regions.

Claim 13 (Currently amended): A fault tolerant liquid crystal display comprising:

a primary liquid crystal display region and at least one secondary liquid crystal display region, wherein a plurality of pixels are arrayed on each of the display regions and the display regions are superimposed upon each other to create a one-to-one correspondence between pixels on the superimposed display regions;

a means of applying and fixing a first voltage to the pixels of the primary liquid crystal display region; and

a means of applying ~~a~~ and fixing a second voltage to the pixels of the at least one secondary liquid crystal display region to achieve a transmitted intensity.

Claim 14 (Currently amended): A method of forming a fault tolerant liquid crystal display comprising the steps of:

providing a polarizer;

providing a plurality of collinearly arranged liquid crystal display regions, each of the liquid crystal display regions including a plurality of pixels configured in a two-dimensional array in the plane of the liquid crystal display regions;

orienting each liquid crystal display region so that each pixel in the array has a one-to-one correspondence with a pixel on an adjacent liquid crystal display region;

providing an analyzer operably coupled to the liquid crystal display regions and the polarizer; and

providing a means to control gray-scale on ~~at least one of the pixels on at least one~~ the plurality of the liquid crystal display regions.

Claim 15 (Previously added): An apparatus for calibrating a fault tolerant liquid crystal display comprising:

a light source;

an intensity homogenizing and projection optics operably coupled to the light source for transmitting a uniform beam of light to the liquid crystal display;

imaging optics for focusing the light passed by the liquid crystal display;

an optical detector for measuring the light focused by the imaging optics;

programming electronics operably coupled to the optical detector; and

a means for setting gray-scale values on individual pixels of the liquid crystal display.

Claim 16 (Previously added): A method for calibrating a fault tolerant liquid crystal display comprising the steps of:

placing a fault tolerant liquid crystal display into an optical test-bed, wherein the liquid crystal display includes a primary liquid crystal display region and least one secondary liquid crystal display region, each liquid crystal display region containing an array of pixels;

uniformly illuminating each of the pixels on the liquid crystal display regions;

determining a desired light intensity through each of the pixels on the liquid crystal display regions;

determining a desired uniformity level for the liquid crystal display;

applying a first voltage to the pixels of the primary liquid crystal display region and applying a second voltage to the pixels of the secondary liquid crystal display region to achieve a transmitted light intensity;

measuring the transmitted light intensity through each of the pixels on the liquid crystal display regions;

comparing the transmitted light intensity with the desired light intensity;

adjusting the first voltage or the second voltage to achieve the desired light intensity and the desired uniformity; and

fixing the adjusted first voltage and adjusted second voltage to maintain the desired light intensity and the desired uniformity.

Claim 17 (Previously added): A method for correcting faulty pixels in a fault tolerant liquid crystal display comprising the steps of:

placing a fault tolerant liquid crystal display into an optical test bed, wherein the liquid crystal display includes a primary liquid crystal display region and least one secondary liquid crystal display region, each liquid crystal display region containing an array of pixels;

uniformly illuminating each of the pixels on the liquid crystal display regions;

determining a desired light intensity through each of the pixels on the liquid crystal display regions;

applying a first voltage to the pixels of the primary liquid crystal display region and applying a second voltage to the pixels of the secondary liquid crystal display region to achieve a transmitted light intensity;

measuring the transmitted light intensity through each of the pixels on the liquid crystal display regions;

comparing the transmitted light intensity with the desired light intensity;

adjusting the first voltage or the second voltage to achieve the desired light intensity; and

fixing the adjusted first voltage and adjusted second voltage to maintain the desired light intensity.